SapphiroScope™
automated sapphire inspection tool
for LED and screen cover applications

The operator can rotate the 3D model, scan axially through the core and visualise cross-sections along the core.

Check video at http://scientificvisual.ch/sapphiroscope/

Who benefits?
- sapphire producers
- suppliers of furnaces
- suppliers of processing equipment
- end users

Key benefits
- Automated quality inspection improves the yield of useable material
- Early defect detection ensures only the best material is processed
- Fast and objective feedback can be given to the sapphire producer
- Tracks the influence of growth process parameters on production quality
- Objective, standardized and repeatable grading of sapphire products improves customer relations.

Material: ‘As cut’ sapphire blocks
Shape: Cylinder or brick
Size: 2”– 4”– 6”– 8” or customized
Cycle time: 6 min per 10 cm ingot height
Automated Sapphire Inspection Solutions

Scientific Visual supplies workstations to **visualise defects in non-polished sapphire** such as HEM and KY crystals, ingots and watch covers. Performing quality control at the start of manufacturing process ensures that only the best quality material enters the costly processing stream.

**Traditional sapphire production**

Typical sapphire factory spends half a day per week machining initially defective junk.

**Production with Scientific Visual tools**

Automated tools detects >96% of internal flaws and ensure that only quality material enters production chain.

Traditionally quality control relies on visual observation by a human expert after the full processing i.e. slicing, grinding and polishing. From 7 to 20% of the sapphire pieces are rejected due to internal material flaws such as cracks or bubbles which become trapped during the crystal growth stage.

With Scientific Visual stations the defect inspection process is automated and takes place prior to slicing or polishing, therefore only quality sapphire goes to processing. Unlike human ocular inspection, the instrumental quality control sets an objective standard and ensures quick diagnostic feedback to the crystal growing unit.